39. (THRICE AMENDED) A liquid purifier combining an unpurified liquid batch container, a liquid flow passageway leading from the container to a purified liquid dispensing outlet, a generator producing an ozone-containing gas, and a pumping system, wherein a batch of unpurified liquid from the container is mixed with the ozone-containing gas from the generator to form a liquid/ozone mixture and the mixture is conveyed through the passageway, is purified, and leaves the purifier through the dispensing outlet, the purifier comprising:

a. an upflow chamber of the liquid passageway downstream of a region where the ozone-containing gas joins the liquid [being formed into an upflow chamber] configured so that a leading flow of the liquid rises at a rate exceeded by a rate of rise of bubbles of the ozone-containing gas entering the upflow chamber with the liquid so that the ozone-containing gas overtakes the leading liquid flow causing a leading volume of liquid flow to be contacted with ozone early in its advance through the passageway; and

b. the liquid passageway includes ozone and liquid mixing and a liquid flow configuration that ensures purifying contact of the liquid with ozone before the liquid reaches the dispensing outlet.

REMARKS

The applicant thanks the examiner for the allowance of claims 21-38 and the recognition of allowable matter in claims 2-4, 10, 19, 40-42, 46, and 56. By the amendment above and remarks that follow, the applicant believes the examiner will see that all claims in the application are in fact allowable over the prior art of record. The applicant has amended claims 1 and 39 to better define the structure and function of the invention over the prior art of record. Please refer to page 5, line 19, through page 6, line 9, of the specification for an explanation of the upflow chamber.

The interpretation of the term "upflow chamber" as used in the rejections in the Office action appears to include any chamber or vessel where the prevailing flow is upwards. This is much broader than the definition of the term as defined by the applicant in the specification of the instant application, especially as described in the portion of the specification identified above. The applicant respectfully reminds the examiner that the applicant can be his own lexicographer, giving terms any meaning he so chooses so long as the meanings are not repugnant to any accepted definitions in the art. Further, the applicant respectfully reminds the examiner that the specification is a dictionary for the terms used in the claims, and that, where the applicant includes such definitions, the

examiner must interpret terms as the applicant has so defined them. Thus, the interpretation of the term "upflow chamber" as seen in the Office action is inappropriately broad and should be rescinded in favor of the applicant's definition of the term.

The examiner rejected claims 1, 5, 8, 9, 11-13, 17, 18, 39, 43-45, 47-50, 54, and 55 under 35 U.S.C. § 103 as being unpatentable over Burris '993 in view of Barnes '016. As stated in the previous response, Burris '993 discloses a batch liquid purifier, but lacks an upflow chamber as recited in the claims. The element referred to in the Office action as an upflow chamber of Burris '993 (chamber 34) is actually an air lift pump. The air lift pump is an essential part of the pumping system of the embodiment of Burris '993 shown in FIG. 4. The ozone bubbles introduced into the liquid not only contact the liquid in the chamber 34, but also pump the liquid through line 35 to move the gas and the liquid downstream toward the gas and liquid separator 21 (see Burris '993, column 5, lines 1-8). There is no disclosure of the air lift pump in Burris '993 causing the ozone-containing gas to form bubbles that rise faster than the liquid through which they travel to ensure that liquid in the preceding flow of liquid has been contacted by the ozone-containing gas. The goal of the air lift pump in Burris '993 is to have the liquid and bubbles travel at the same speed.

By contrast, the upflow chamber 40 of the instant claims is not an essential part of the pumping system. A separate claimed pumping system imparts motion to the fluid in the purifier, and the upflow chamber 40 ensures proper contact between the liquid and the ozone-containing gas. Because of the claimed unique configuration of the instant upflow chamber, the liquid rises slower than the rising ozone bubbles entrained in the mixture. As a result, the upflow chamber of the instant claims causes the rising liquid to be overcome by faster rising ozone bubbles and ensures that a leading volume of liquid flow is in contact with ozone early in the purification cycle. By purifying the leading volume of liquid early in the cycle, the claimed system also ensures that the leading volume purifies any residue in the passageway from previous cycles (see page 6, lines 1-8). Thus, Burris '993 does not disclose or suggest the limitations of the instant claims.

Barnes '016 does not overcome the deficiencies of the disclosure of Burris '993 because Barnes '016 discloses a continuous, non-batch liquid purification process. Despite the examiner's unsupported claims to the contrary, the applicant insists that one of ordinary skill in the art at the time the invention was made would not have looked to continuous, non-batch liquid purification processes for ideas when designing a batch process. The applicant refers the examiner to the discussion in the previous response of the term "batch" and its usage in the instant application, such discussion hereby being

incorporated by reference. Therefore, it would not have been obvious to one of ordinary skill at the time the invention was made to use teachings of Barnes '016 to modify the purifier of Burris '993 even if Barnes '016 did disclose the features the rejection states are disclosed therein.

Claims 1 and 39 have been amended to make the above-described differences between the systems of Burris '993, Barnes '016, and the claimed system more clear. In light of these differences and the amendments to claims 1 and 39, it should now be apparent that Burris '993 and Barnes '016 do not disclose or suggest, alone or combined, the limitations of claims 1, 5, 8, 9, 11-13, 17, 18, 39, 43-45, 47-50, 54, and 55, and that these claims, indeed all claims in the application, are now allowable over the prior art of record.

The examiner rejected claims 6 and 7 under 35 U.S.C. § 103 as being unpatentable over Burris '993 in view of Barnes '016 as applied to claim 1 and further in view of Uban *et al.* '488. As explained above and in the previous response, the chamber of Burris '993 is an air lift pump that operates differently than the claimed upflow chamber and fails to offer important purification advantages of the claimed upflow chamber. In addition, Barnes '016 is not a single-cycle/batch process and does not operate in the same manner as the claimed system. As a result, it could not have been obvious to one of ordinary skill in the art at the time of filing to modify Burris '993 in view of Barnes '016 to obtain the purification system as claimed.

In addition, the filter indicator of Uban *et al.* '488 differs from the filter indicator of the claimed system. The filter indicator of the Uban *et al.* '488 system operates as a function of rising water level. When the level of the water reaches a predetermined height, the Uban *et al.* '488 indicator senses that the filter is clogged and initiates a cleaning operation (see column 5, lines 34-53). The Uban *et al.* '488 indicator does not operate as a function of the extent of purifier operation as claimed. The filter indicator as claimed can operate as a function of the duration of operation or as a function of a predetermined number of purification cycles, but it does not operate as a function of liquid level (see page 8, lines 13-18). Therefore, it could not have been obvious to one of ordinary skill in the art to modify Burris '993 in view of Barnes '016 and further in view of Uban *et al.* '488 to obtain the claimed system having a filter indicator that operates as a function of the extent of system operation as claimed.

The examiner rejected claims 14-16, 20, 51-53, and 57 under 35 U.S.C. § 103 as being unpatentable over Burris '993 in view of Barnes '016 as applied to claims 1 and 39 and further in view of Norris '261. Again, as explained above and in the previous response, Burris '993 does not operate in the same manner as the claimed system and does not offer important purification advantages of the claimed system. In addition, Barnes '016 is not a single-cycle/batch process and does not operate in the same manner as the claimed system. As a result, it could not have been obvious to one of ordinary skill in the art at the time of filing to modify Burris '993 in view of Barnes '016 to obtain the claimed system.

Furthermore, because the removable container and the dispenser of Norris '261 are different from the container and dispenser of the claimed system, it could not have been obvious at the time of filing for one of ordinary skill in the art to modify Burris '993 in view of Barnes '016 and further in view of Norris '261. First, unlike the container of the claimed system, the removable container of Norris '261 is permanently attached to a dispenser (i.e., flexible tube 22) via a nipple either by being welded directly to the container or by being permanently secured to the container with a lock nut as shown in FIG. 3 (see page 3, left column, lines 71-75, and right column, lines 1-3). Moreover, the dispenser of Norris '261 (i.e., the flexible tube 22), unlike the claimed dispenser, does not activate a purifier when it is extended and does not deactivate a purifier when it is retracted. Instead, the dispenser of Norris '261 is nothing more than a length of flexible tubing 22 wherein a flow of liquid is controlled with a valve 32. Furthermore, the dispenser (i.e., flexible tube 22) of Norris '261 does not activate a switch to block dispensing of liquid unless the dispenser is extended. Instead, liquid flow through the Norris '261 dispenser is controlled using a valve plunger 35 to pinch the walls of the dispensing tube together. Clearly, because the container and dispenser of Norris '261 are entirely different than the container and dispenser of the claims, it could not have been obvious for one of ordinary skill in the art at the time of filing to modify Burris '993 in view of Barnes '016 and further in view of Norris '261 to obtain the system having the container and dispenser as claimed.

* * * *

In view of the above, the applicant submits that claims 1, 5-9, 11-18, 20, 39, 43-45, 47-55, 57, and 58, and in fact all of the claims, are now allowable over the prior art. The applicant requests reconsideration and withdrawal of the rejections and objections. Should the examiner have any questions, comments, or suggestions, he is invited to call applicant's representative at the number below.

Respectfully submitted,

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